

REMARKS

The Amendments

The "chiral or achiral" language in claim 1 was removed since it is unnecessary. The remaining language reciting alkyl defines the same invention since "chiral or achiral alkyl" is inclusive of all alkyls. Claim 2 is amended to replace the term "a non-polymerizable group" to "not a polymerizable group" so as to make clear it is distinguishing from the prior defined "polymerizable group." The meaning is not changed by this amendment. These amendments do not narrow the scope of the claims. Support for the new dependent claims is found in the specification, for example, at pages 10-11; page 14, line 17; and page 16, lines 7-13.

To the extent that the amendments avoid the prior art or for other reasons related to patentability, competitors are warned that the amendments are not intended to and do not limit the scope of equivalents which may be asserted on subject matter outside the literal scope of any patented claims but not anticipated or rendered obvious by the prior art or otherwise unpatentable to applicants. Applicants reserve the right to file one or more continuing and/or divisional applications directed to any subject matter disclosed in the application which has been canceled by any of the above amendments.

The Restriction Requirement

Regarding claim 17, the Final Office Action mailed July 24, 2003, indicated this claim to be withdrawn from consideration pursuant to the restriction requirement. However, a reading of the claim should make it quite clear that it belongs in the elected Group I, multireactive polymerizable mesogenic compound, of the restriction requirement. Claim 17 defines a compound within the compounds of claim 8, which is in the elected group. Claim

17 is identical to claim 9 (in the elected Group) except it is dependent on claim 8 (also in the elected Group). Claim 17 is not directed to a composition, polymer or article which were the restricted Groups II, III and IV. Applicants, thus, urge that the Examiner indicate in the next action that this claim is not withdrawn. The below arguments assume this will be done.

The Rejection under 35 U.S.C. §112, second paragraph

The rejection of claims 1, 2 and 6 under 35 U.S.C. §112, second paragraph, is respectfully traversed.

The rejection is rendered moot, in part, because the "chiral or achiral alkyl" and "non-polymerizable group" terms no longer appear in the claims. The term "chiral" appears in new claim 20, but it is defined as a particular alkyl chiral radical. The determination of whether an alkyl radical is chiral is straightforward to one of ordinary skill in the art. Chirality is a direct result of the group's structure and it is definitive yes or no type determination. The issue of the definiteness of the "polymerizable group" and "mesogenic group" terms remains.

The standard for definiteness under 35 U.S.C. §112, second paragraph, is set forth in terms of reasonableness and in terms of consideration of both the prior art and the description provided in the application. Thus, the claims need not be absolutely definite but are acceptable when reasonably definite to one of ordinary skill in the art. See, for example, *In re Moore*, 439 F.2d 1232, 1235, 169 USPQ 236 (CCPA 1971); and, *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1385, 231 USPQ 81, 94-95 (Fed. Cir. 1986). As to both terms, the rejection appears to be based on the assertion that the terms are not limited to specifically defined structures and, thus, apparently, one of ordinary skill in the art would not find the terms reasonably definite. However, there is no assertion that one of ordinary skill in the art would not know the meaning of the terms "polymerizable group" and

"mesogenic group." Further, the Office Action appears to base the rejection, at least partly, on the assertion that the terms cover a large number of possible groups. However, the law does not support the proposition that breadth of a claim alone, is a proper basis for indefiniteness; see *In re Gardner*, 166 USPQ 138 (CCPA 1970) and M.P.E.P. §2173.04.

Applicants respectfully urge that the meaning of these terms would have been reasonably definite to one of ordinary skill in the art, considering their knowledge of the art. One of ordinary skill in the art would be able to reasonably determine the metes and bounds of these terms and the claims containing them, i.e., they would be able to reasonably determine whether a group is a polymerizable group or a mesogenic group. In fact, these terms are terms of art, are extensively used in this art area and have a clear meaning in this art. The art of polymerizable mesogenic materials, particularly liquid crystal materials, is well established and one of ordinary skill in this art is well versed in the nature of polymerizable groups and mesogenic groups and how to provide compounds containing them. Their known meaning is exemplified by the Onishi patent (U.S. Patent No. 5,750,213, patented before applicants' priority date) of record herein. See, e.g., col. 7, line 57, to col. 8, line 46, of Onishi, describing the nature of polymerizable groups and mesogen groups in compounds for making liquid crystal polymers. The prior art is replete with similar such references.

For the above reasons, it is urged that the instant claims are reasonably definite to one of ordinary skill in the art and, thus, the rejection under 35 U.S.C. §112, second paragraph, should be withdrawn.

The Obviousness-type Double Patenting Rejection

The obviousness-type double patenting rejection of claims 1-6 and 9-10 over claims

1-17 of U.S. Patent No. 5,723,066 is respectfully traversed.

The claims of the '066 patent do not overlap any scope of the instant claims nor are the instant claims an obvious variant of any subject matter of the '066 claims. The multi-reactive compounds of Coates contain one polymerizable group on each side of the mesogenic core of cyclic groups or contain only one polymerizable group. For example, in the first formula provided in the Office Action, there is one polymerizable double bond at each of the two terminal ends of the compound. In the second two formulae shown in the Office Action, there is only one polymerizable group in the whole structure. There is no encompassing, disclosure or suggestion of any compound meeting applicants' formula I:



wherein R^2 is a group, as recited, "which is substituted with at least two identical or different groups P" (emphasis added). Compare the language at the end of applicants' claim 1. The '066 patent compounds are not identical to applicants' compounds, as stated in the Office Action. In the terms of applicants' claims, the compounds of the '066 patent referred to in the Office Action would contain only one group P, i.e., polymerizable group, substituted on the position corresponding to applicants' R^2 group. In the '066 patent, the only multi-reactive compounds disclosed or suggested are those with polymerizable groups at the terminal ends of the main chain containing mesogenic groups. There is no disclosure or suggestion of a multi-reactive compound having two or more polymerizable groups on one side of the structure without intervening mesogenic groups.

Further, see the discussion of the prior art and the distinction thereof at pages 2-4 of the instant specification, pointing out the above-described distinction and the advantages thereof for applicants' invention.

For the above reasons, the obviousness-type double patenting rejection should be

withdrawn.

The Rejections under 35 U.S.C. §102

The rejections of claims 1-6 and 9-10 under 35 U.S.C. §102, as being anticipated by each of three Coates patents (U.S. Patent Nos. 5,871,665; 5,723,066; and 5,746,938) are respectfully traversed.

The Coates '066 patent is discussed above and that discussion is incorporated herein by reference. Coates' '066 disclosure is distinguished for the analogous reasons that its claims are distinguished. To summarize, Coates '066 does not disclose or suggest any polymerizable mesogenic compound which has multiple polymerizable groups on one side of its structure, i.e., corresponding to applicants' R² group which is substituted by at least two polymerizable groups.


Coates '665 and Coates '938 both provide an identical disclosure to Coates '066; they are all in the same family related as continuing applications. Thus, the instant claims are distinguished from these patent disclosures for the same reasons as Coates '066.

For the above reasons, it is urged that the rejections under 35 U.S.C. §102 over the three Coates patents should be withdrawn. It is further urged that none of the Coates patents supports a rejection under 35 U.S.C. §103 of any of the instant claims because the references provide no suggestion or motivation to modify their compounds to arrive at the distinct structure of the compounds of the instant claims.

It is submitted that the claims are in condition for allowance. However, the Examiner is kindly invited to contact the undersigned to discuss any unresolved matters.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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